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WINSTAR Display

OLED SPECIFICATION

Model No:

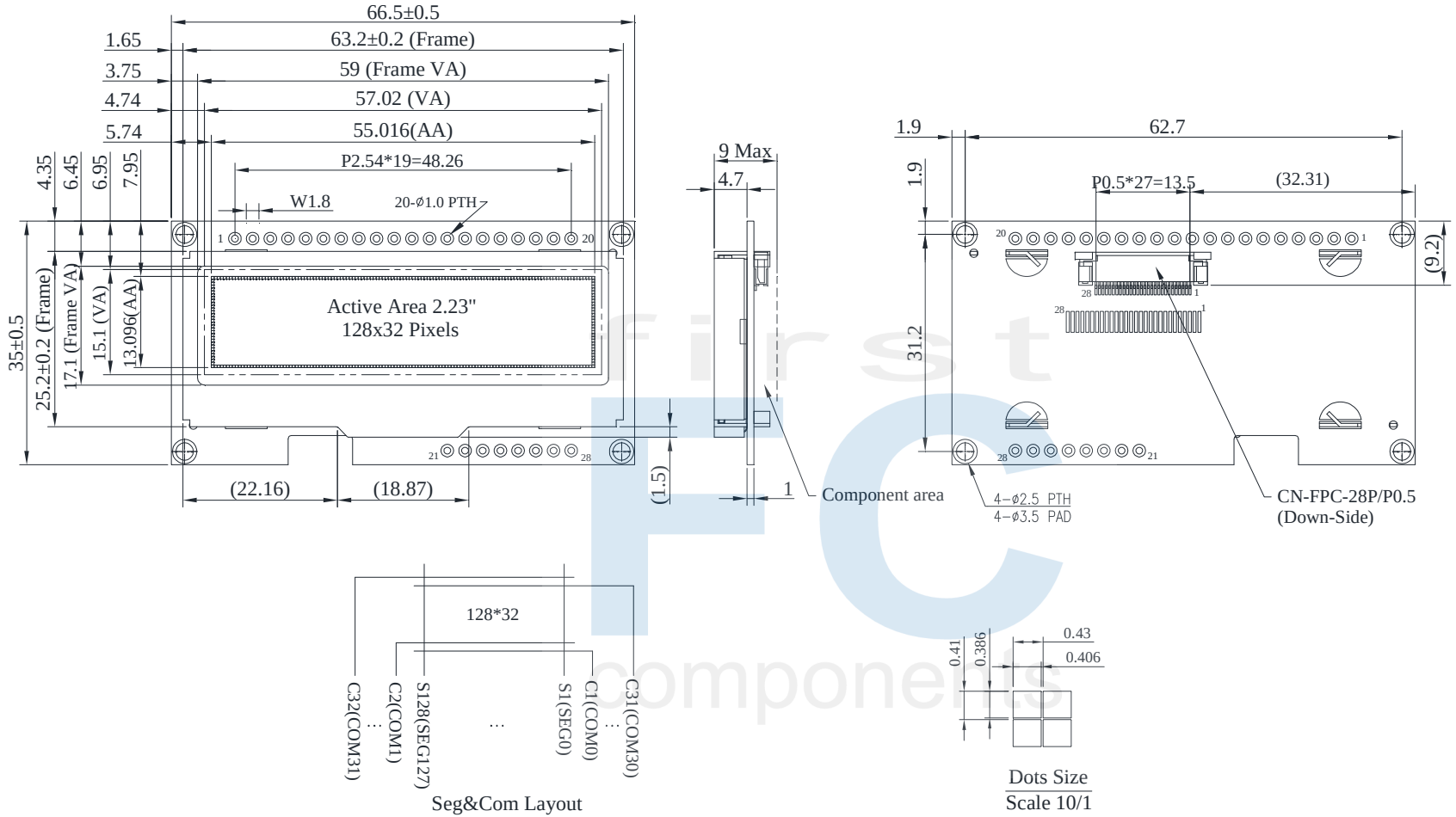
WEP12832W#NP3N00000-FC

General Specification

Item	Dimension	Unit
Dot Matrix	128 x 32 Dots	—
Module dimension	66.5 × 35.0 × 9 Max.	mm
Active Area	55.016 × 13.096	mm
Pixel Size	0.406 × 0.386	mm
Pixel Pitch	0.43 × 0.41	mm
Display Mode	Passive Matrix	
Display Color	White	
Drive Duty	1/32 Duty	
IC	SH1106	
Interface	6800,8080,4-Wire SPI,I2C	
Size	2.23 inch	

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Contour Drawing & Block Diagram



PIN	SYMBOL
1	VSS
2	VDD
3	NC
4	D/C#
5	R/W#
6	E/RD#
7	DB0
8	DB1
9	DB2
10	DB3
11	DB4
12	DB5
13	DB6
14	DB7
15	CS#
16	RES#
17	BS1
18	BS2
19	NC
20	FG
21	NC
22	NC
23	NC
24	NC
25	NC
26	VSS
27	NC
28	NC

The non-specified tolerance of dimension is ±0.3 mm.

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Interface Pin Function

<table>
<tr><th>No.</th><th>Symbol</th><th>Function</th></tr>
<tr><td>1</td><td>VSS</td><td>Ground.</td></tr>
<tr><td>2</td><td>VDD</td><td>Power supply input.</td></tr>
<tr><td>3</td><td>NC</td><td>No connection.</td></tr>
<tr><td>4</td><td>D/C#</td><td>This is the Data/Command control pad that determines whether the data bits are data or a command.
D/C = “H”: the inputs at DB0 to DB7 are treated as display data.
D/C = “L”: the inputs at DB0 to DB7 are transferred to the command registers.
In I2C interface, this pad serves as SA0 to distinguish the different address of OLED driver.</td></tr>
<tr><td>5</td><td>R/W#</td><td>This is a MPU interface input pad.
When connected to an 8080 MPU, this is active LOW. This pad connects to the 8080 MPU WR signal. The signals on the data bus are latched at the rising edge of the WR signal.
When connected to a 6800 Series MPU: This is the read/write control signal input terminal.
When R/W = “H”: Read.
When R/W = “L”: Write.</td></tr>
<tr><td>6</td><td>E/RD#</td><td>This is a MPU interface input pad.
When connected to an 8080 series MPU, it is active LOW. This pad is connected to the RD signal of the 8080 series MPU, and the data bus is in an output status when this signal is “L”.
When connected to a 6800 series MPU, this is active HIGH. This is used as an enable clock input of the 6800 series MPU.
When RD = “H”: Enable.
When RD = “L”: Disable.</td></tr>
<tr><td>7~14</td><td>DB0~DB7</td><td>This is an 8-bit bi-directional data bus that connects to an 8-bit or 16-bit standard MPU data bus.
When the serial interface is selected, then D0 serves as the serial clock input pad (SCL) and D1 serves as the serial data input pad (SI). At this time, D2 to D7 are set to high impedance.
When the I2C interface is selected, then D0 serves as the serial clock input pad (SCL) and D1 serves as the serial data input pad (SDAI). At this time, D2 to D7 are set to high impedance.</td></tr>
<tr><td>15</td><td>CS#</td><td>This pad is the chip select input. When CS = “L”, then the chip select becomes active, and data/command I/O is enabled.</td></tr>
<tr><td>16</td><td>RES#</td><td>This is a reset signal input pad. When RES is set to “L”, the settings are initialized. The reset operation is performed by the RES signal level.</td></tr>
<tr><td>17</td><td>BS1</td><td rowspan="2">These are the MPU interface mode select pads.
<table>
<tr><th></th><th>68XX-parallel</th><th>80XX-parallel</th><th>Serial</th><th>I2C</th></tr>
<tr><td>BS1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td>BS2</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
</table></td></tr>
<tr><td>18</td><td>BS2</td></tr>
</table>

19	NC	No connection.
20	FG	Ground.
21~25	NC	No connection.
26	VSS	Ground.
27~28	NC	No connection.

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Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Notes
Supply Voltage For Logic	VDD-VSS	-0.3	3.6	V	1,2
Operating Temperature	TOP	-40	+80	°C	—
Storage Temperature	TSTG	-40	+85	°C	—

Note：

1. All the above voltages are on the basis of “VSS = 0V”.
2. When this module is used beyond the above absolute maximum ratings, permanent breakage of the module may occur. Also, for normal operations, it is desirable to use this module under the conditions according to Section 6.“Electrical Characteristics”. If this module is used beyond these conditions, malfunctioning of the module can occur and the reliability of the module may deteriorate.
3. The absolute limit temperature was verified according to the test conditions of reliability test (See section 9. Reliability) , and module was met all criteria.
4. The defined temperature ranges do not include the polarizer. The maximum withstood temperature of the polarizer should be 80 °C.

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Electrical Characteristics

DC Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage for Logic	VDD	—	2.9	3.3	3.5	V
Input High Volt.	VIH	—	0.8XVDD	—	VDD	V
Input Low Volt.	VIL	—	VSS	—	0.2xVDD	V
Output High Volt.	VOH	—	0.8xVDD	—	VDD	V
Output Low Volt.	VOL	—	VSS	—	0.2xVDD	V
Display 50% Pixel On	IDD	VDD=3.3V	—	75	110	mA

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